

In re Application of Shen et al.,
S.N. 10/768,825
Filed: 02/27/2004
Attorney Docket No. LA0100

AMENDED CLAIMS

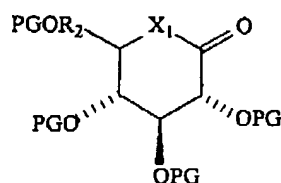
What is claimed:

1. (Currently Amended) A method of making glycosides using a non-cryogenic process comprising, in a continuous process, the steps of:
 - (a) lithiating an aromatic reactant having a leaving group using a lithium reagent in a first microreactor ~~under at~~ non-cryogenic conditions temperatures to form a lithiated anion species; and
 - (b) coupling the lithiated anion species with a carbonyl substituted reactant to form a glycoside.
2. (Original) The method according to claim 1, wherein said lithiating step is performed at a temperature of from about -10°C to about 20°C.
3. (Original) The method according to claim 2, wherein said lithiating step is performed at a temperature of from about -10°C to about 5°C.
4. (Original) The method according to claim 1, wherein the residence time in said first microreactor is from about 2 seconds to about 3 seconds.
5. (Original) The method according to claim 1, wherein said aromatic reactant is a halide.
6. (Original) The method according to claim 1, where said lithium reagent is selected from the group consisting of n-BuLi and t-BuLi.
7. (Original) The method according to claim 1, wherein a yield of said glycoside is greater than about 80%.
8. (Currently Amended) The method according to claim 1, wherein said coupling step is performed ~~under at~~ cryogenic conditions temperatures.
9. (Original) The method according to claim 8, wherein said coupling step is performed at a temperature of less than about -80°C.
10. (Original) The method according to claim 1, wherein said coupling step is performed in a second microreactor under non-cryogenic conditions.

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11. (Original) The method according to claim 10, wherein said coupling step is performed at a temperature of from about -20°C to about 20°C.
12. (Original) The method according to claim 11, wherein said coupling step is performed at a temperature of about -10°C.
13. (Original) The method according to claim 10, wherein the residence time in said second microreactor is from about 2 seconds to about 3 seconds.
14. (Original) The method according to claim 10, wherein a yield of said glycoside is greater than about 70%.
15. (Currently Amended) A method of making glycosides using a non-cryogenic process comprising, in a continuous process, the steps of:
 - (a) lithiating an aromatic reactant having a leaving group using a lithium reagent to form a lithiated anion species; and
 - (b) coupling the lithiated anion species with a carbonyl substituted reactant according to formula IV



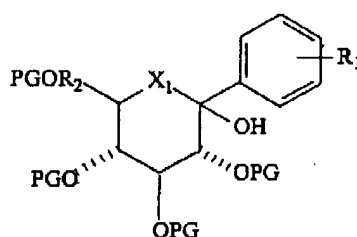
[IV]

in a microreactor under non-cryogenic conditions to form a glycoside.

16. (Original) The method according to claim 15, wherein said coupling step is performed at a temperature of from about -10°C to about 20°C.
17. (Original) The method according to claim 15, wherein said coupling step is performed at a temperature of from about -10°C to about 5°C.
18. (Original) The method according to claim 15, wherein the residence time in said microreactor is from about 2 seconds to about 3 seconds.

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19. (Currently Amended) The method according to claim 15, wherein said lithiating step is performed under at cryogenic conditions temperatures.
20. (Original) The method according to claim 1, further comprising the step of :
(c) deprotecting the glycoside.
21. (Original) A glycoside formed by the method of claim 1.
22. (Currently Amended) A method of continuous process for making a glycoside having the general structural formula [I]:

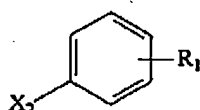


[I]

wherein: R_1 is hydrogen, NO_2 , OR_4 , a halogen, or a substituted or non-substituted alkyl, aryl, or heterocycle; R_2 is a substituted or non-substituted alkyl group; R_4 is a substituted or non-substituted alkyl or aryl; X_1 is a heteroatom; and PG is a protective group,

the method including the steps of:

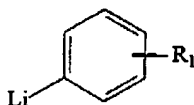
- (a) reacting an aromatic reactant having general structural formula [II]:



[II]

wherein: R_1 is as defined previously and X_2 is a leaving group, in a first microreactor with an organo lithium reagent to form a lithiated anion species having general structural formula [III]:

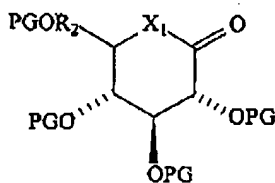
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[III]

wherein R₁ is as defined previously, and

(b) coupling the lithiated anion species [III] with a carbonyl substituted compound having general structural formula [IV]:



[IV]

wherein: R₂, X₁ and PG are as described previously, to form the compound having general structural formula [I].

23. (Original) The method of claim 22 wherein the lithiating step is performed at a temperature of from about -10°C to 20°C.
24. (Currently Amended) The method of claim 23 wherein the coupling step is performed in a second microreactor under at non-cryogenic conditions temperatures.
25. (Original) The method of claim 23 wherein the lithiating step is conducted in a solvent selected from THF/toluene or THF/heptane.
26. (Currently Amended) The method of claim 23 wherein the coupling step is performed in a second microreactor under at non-cryogenic conditions temperatures.
27. (Original) The method of claim 26 wherein the coupling step is performed at a temperature of from about -20°C to 20°C.